

Remarks

The present invention is a mobile telecommunications device and a method of manufacturing a mobile communications device. A mobile telecommunications device (1) in accordance with an embodiment of the invention includes a casing 2,3, an earpiece 6, and a cover 33 associated with the earpiece to define a resonant cavity 34 between the ear piece and the casing, wherein the cover has an opening 37 therein for the transmission of sound from the earpiece via the cavity into an acoustic path 39 formed between a casing 2 and the cover 33. The present invention by creating a resonant cavity permits the earpiece to be tuned with respect to the cover 33 which permits casings 2 to be changed and whose design has little or no effect on the acoustic characteristics or acoustic response of the earpiece. See page 7, lines 14-19 of the original Specification.

Claims 1-4, 6-8 and 10-12 stand rejected under 35 USC §102 as being anticipated by USP 5,790,679 (Hawker et al), with respect to claims 1 and 11 the Examiner reasons as follows:

"Hawker teaches a mobile telecommunications device (see figure 1, terminal 10) and method comprising a casing (see figure 1, case 12), an earpiece (i.e., receiver transducer)(see figure 1, receiver transducer 20), and a cover (i.e., enclosure) associated with The earpiece to define a resonant cavity between the earpiece and the casing (see figure 3, enclosure 26, transducer 20, col. 2, ln. 35-39, col. 3, ln. 37-45), wherein the cover has an opening therein for the transmission of sound from the earpiece via the cavity into an acoustic path formed between the casing and the cover (see figure 3, opening 34, col. 3, ln. 1-45). "

These grounds of rejection are traversed for the following reasons.

The Examiner has concluded that the earpiece defines a resonant cavity between the earpiece and the casing. The transducer 20 corresponds to the claimed earpiece with the Examiner relying upon the enclosure 26 as the casing. The Examiner's reference to col. 2, lines 35-39 and col. 3, lines 37-45 apparently

referring to a resonant cavity is submitted to be incorrect. Col. 2, lines 35-39 describe the transducer as being located within the transducer enclosure 26 but does not state anything which a person of ordinary skill in the art would consider to pertain to resonant conditions being present. Moreover, lines 37-45 teach away from resonance being within the cavity 6 since what is taught therein is the use of an acoustic material such as the acoustic screen 50 which is located over the ports 46 to minimize "the effects of any resonances between the ports and the chambers". Similarly, the use of acoustic foam in one or more of the chambers 30 and 32 is suggested again to minimize the effects of any resonance. It is therefor submitted that a person of ordinary skill in the art would not consider Hawker et al to suggest the claimed resonant cavity between the earpiece which must be the transducer 20 and the casing since Hawker et al teaches the use of materials to eliminate resonance.

Moreover, claim 1 recites "wherein the cover has an opening therein for transmission of sound from the earpiece via the cavity into an acoustic path formed between the casing and the cover". It is submitted that the Examiner has not demonstrated how he is reading Hawker et al to teach "transmission of sound from the earpiece via the [resonant] cavity into an acoustic path formed between the casing and the cover." As indicated above, Hawker specifically teaches that foam should be utilized to avoid any resonance at all and therefor it is submitted that a person of ordinary skill in the art would understand Hawker et al to teach away from the utilization of resonance.

Moreover, considering the earpiece to correspond to the transducer 20, the Examiner has not explained what structure within Hawker et al corresponds to "via the cavity from which sound passes" into an acoustic path formed between the

casing and the cover. It appears that the Examiner is interpreting the cover to be the partition 28 which is the only structure "associated with the earpiece". However, the opening 34 which is defined by the partition 28 is clearly not a resonant cavity. Accordingly, claim 1 can not be anticipated.

Moreover, claim 11 recites "the step of tuning the cover to the frequency of the earpiece such that the configuration of the casing has substantially no effect on the acoustic response of the earpiece". It is noted that the Examiner has not suggested anywhere in the discussion of claims 1 and 11 where the "tuning the cover" occurs which must be the partition 28 and/or enclosure 26 such that the configuration of the casing has substantially no effect on the acoustic response of the earpiece.

If either chamber 30, which is the front enclosure or chamber 32 which is the back enclosure, is construed by the Examiner to be the resonant cavity, then the limitation that sound is transmitted from the earpiece, which must be transducer 20, via the cavity into an acoustic path formed between the casing and the cover is not met since there is no resonant cavity into which sound is transmitted into an acoustic path formed between the casing and the cover.

It is submitted that the Examiner has not demonstrated on the record where the structure of a cover associated with the earpiece defining a resonant cavity between the earpiece and the casing occurs in combination with "the cover has an opening therein for the transmission of sound from the earpiece via the cavity into the acoustic path formed between the casing and the cover". It is submitted that the structures defined in claims 1 and 11 in combination with the transmission of sounds from the earpiece via the cavity into an acoustic path formed between the casing and the cover is not taught in Hawker et al.

Dependent claims 2-4, 6-8, 10- and 12 are further not anticipated for the reasons set forth above with respect to claims 1 and 11:

With respect to claim 2, it is submitted that the Examiner has not demonstrated the claimed acoustic path extending laterally away from the earpiece between the casing and the cover.

With respect to claim 4, it is submitted that the Examiner cannot demonstrate by inherency a metal cover from the Examiner's construction of Hawker et al teaching the cover made of plastic.

With respect to claim 6, it is submitted that the Examiner has not demonstrated where the resonant cavity is formed by a depression in the plate. Apparently the Examiner is referring to the front enclosure 30 with the partition 28 being construed as being the plate. However, there is no depression in the partition 28 since the transducer 20 is a separate structure and the opening 34 cannot be considered to be a depression in the plate.

With respect to claim 7 the Examiner has not demonstrated that the acoustic path as recited in claim 1 is limited to the structural relations therein is "configured to increase internal leaking of sound generated by the earpiece to improve leak tolerance of the device". The reference to leakage in the description of the prior art in column 1, lines 41-49, does not meet the foregoing limitation.

Claim 8 requires the casing to have a plurality of apertures for the external transmission of sound from the device by the resonant cavity and the acoustic path. It is submitted that the relationship of "the sound from the device via the resonant cavity in the acoustic path" is not met.

Claim 5 stands rejected under 35 USC §103 as being unpatentable over Hawker et al in view of USP 5,963,434 (Jonsson et al). These grounds of rejection are traversed for the following reasons.

In the first place, it is stated above, Hawker et al does not teach the earpiece being mounted to a substrate and the cover of the metal plate which extends over the substrate. Moreover, claim 5 further limits claim 4 in reciting that the substrate is

a lightguide assembly. While Jonsson et al teaches a lightguide 14 for reflecting light from printed circuit board 12, it is submitted a person of ordinary skill in the art would not consider the disclosed usage of a lightguide to be combinable with the claimed subject matter including the substrate on which the earpiece is mounted including a cover which defines a resonant cavity except by impermissible hindsight.

Claim 9 stands rejected under 35 USC §103 as being unpatentable over Hawker et al in view of U.S. Publication 2002/0197965 (Peng). These grounds of rejection are traversed for the following reasons.

Peng has been cited as teaching interchangeable casings having a plurality of apertures. However, claim 9 requires that "each casing being different and the resonant cavity and the acoustic part being configured so that an acoustic response to the earpiece remains substantially the same irrespective of which casing is attached to the device". It is submitted that a person of ordinary skill in the art would not consider Peng to suggest this feature. Moreover, the Examiner has not demonstrated any reason why a person of ordinary skill in the art would even be motivated to consider the combination of Hawker et al in view of Peng.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of, either by telephone discussion or by a personal interview, the Examiner is invited to contact the undersigned representative at the number indicated below.

To the extent necessary, applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the

filing of this paper, including Extension of Time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Dep. Acct. No. 01-2135 (1076.40921X00), and please credit any excess fees to such deposit account.

Respectfully submitted,
ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read "Donald E. Stout", is written over a horizontal line.

Donald E. Stout
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